Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VI SEMESTER B.Tech. (CHEMICAL ENGINEERING)

MAKE UP EXAMINATION, JUNE 2018

SUBJECT: O.E.: INDUSTRIAL POLLUTION CONTROL (CHE 3282)

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates: Answer ALL **the questions.**

1 A	Explain the Hydrologic cycle with a neat diagram.	**3**
1 B	What is the significance of the following? i) Volatile solids ii) Turbidity iii) Temperature iv) Alkalinity v) Acidity vi) BOD	**3**
1 C	Explain the principle of i) Freeze out sampling & ii) Impingers to collect gaseous sample and iii) High volume sampler & iv) Cyclone separator to collect particulate sample.	**4**
2 A	Explain i) Advanced oxidation process ii) Activated Carbon Adsorption used in tertiary treatment of wastewater.	**4**
2 B	Differentiate between Anaerobic and Aerobic treatment of wastewater.(**Any 2**)	**2**
2C	Explain with neat diagrams the principle and working of i) Primary Sedimentation Tank & ii) Dispersed Air Floatation in primary treatment of wastewater.	**4**
3 A	Describe the three approaches for capture of CO_2 involved in Carbon sequestration.	**3**
3 B	Explain with a neat diagram the principle and working of i) Electrostatic Precipitator & ii) Bag filter used to control particulate matter emission.	**4**
3 C	The maximum CO concentrations normally measured in downtown Salt Lake City are about 3000 $\mu g/m^3$. These values occur during strong inversions during which wind speed was 0.5 m/s and mixing height was 95 m. The background concentration for this situation is estimated to be 450$\mu g/m^3$. The downtown area of Salt Lake City may be approximated as 4 km by 3 km square. Estimate the emission density (g/s. m^2) for CO for downtown Salt Lake City.	**3**
4	Explain the different steps involved in sludge treatment (in not more than two or three sentences per process).	**10**
5 A	Explain any two methods of managing e-waste in industry.	**4**
5 B	Describe methods adopted to control noise pollution in industry.	**6**

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